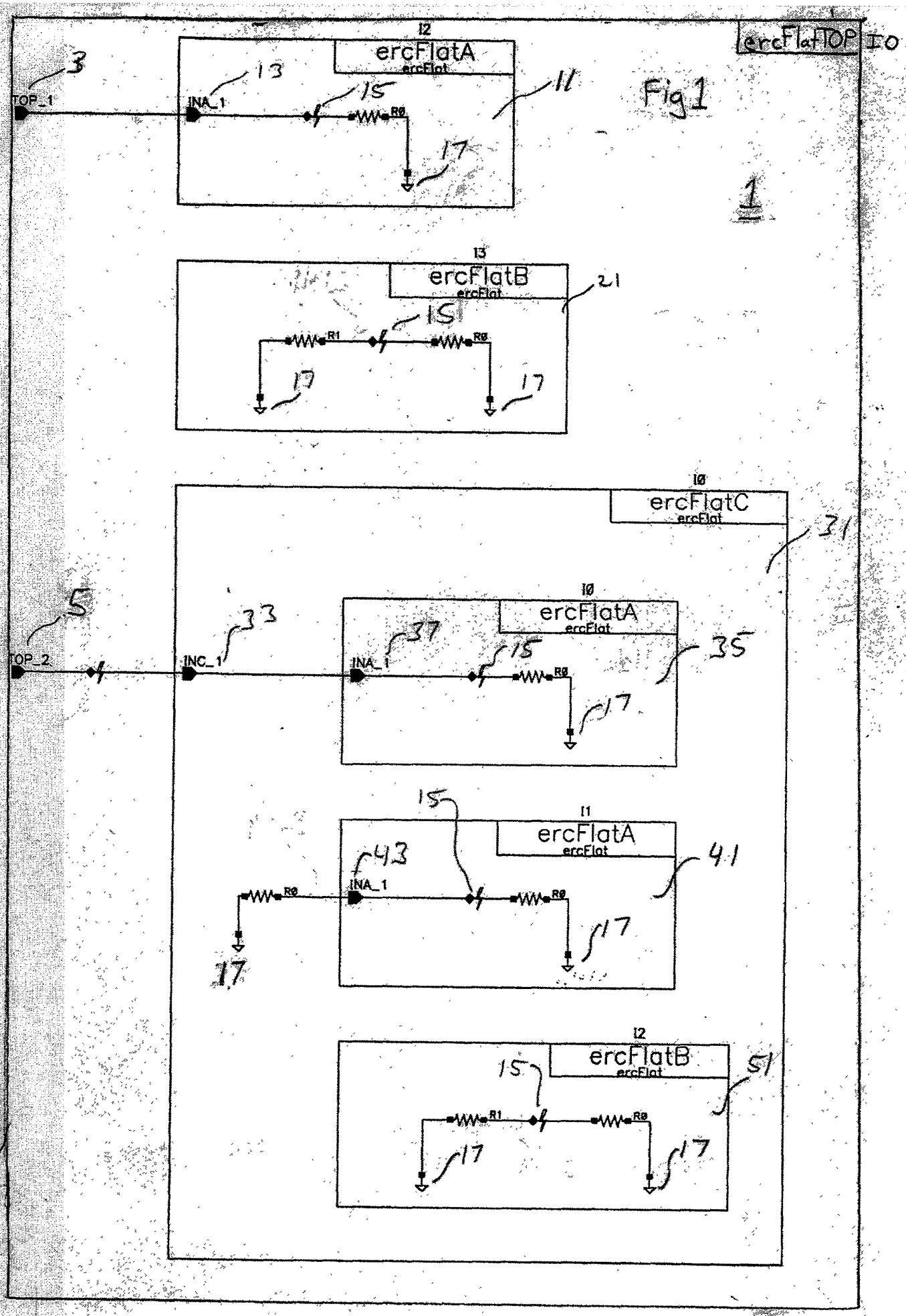
ercFlatTOP
I0
I2
ercFlatA
ercFlat
TOP_1
INA_1
R0
I3
ercFlatB
ercFlat
R1
I0
ercFlatC
ercFlat
TOP_2
INC_1
INA_1
I1
ercFlatA
ercFlat
INA_1
I2
ercFlatB
ercFlat
R1
R0
3
13
15
11
17
1
21
31
5
33
37
35
43
41
51
2

Fig 1

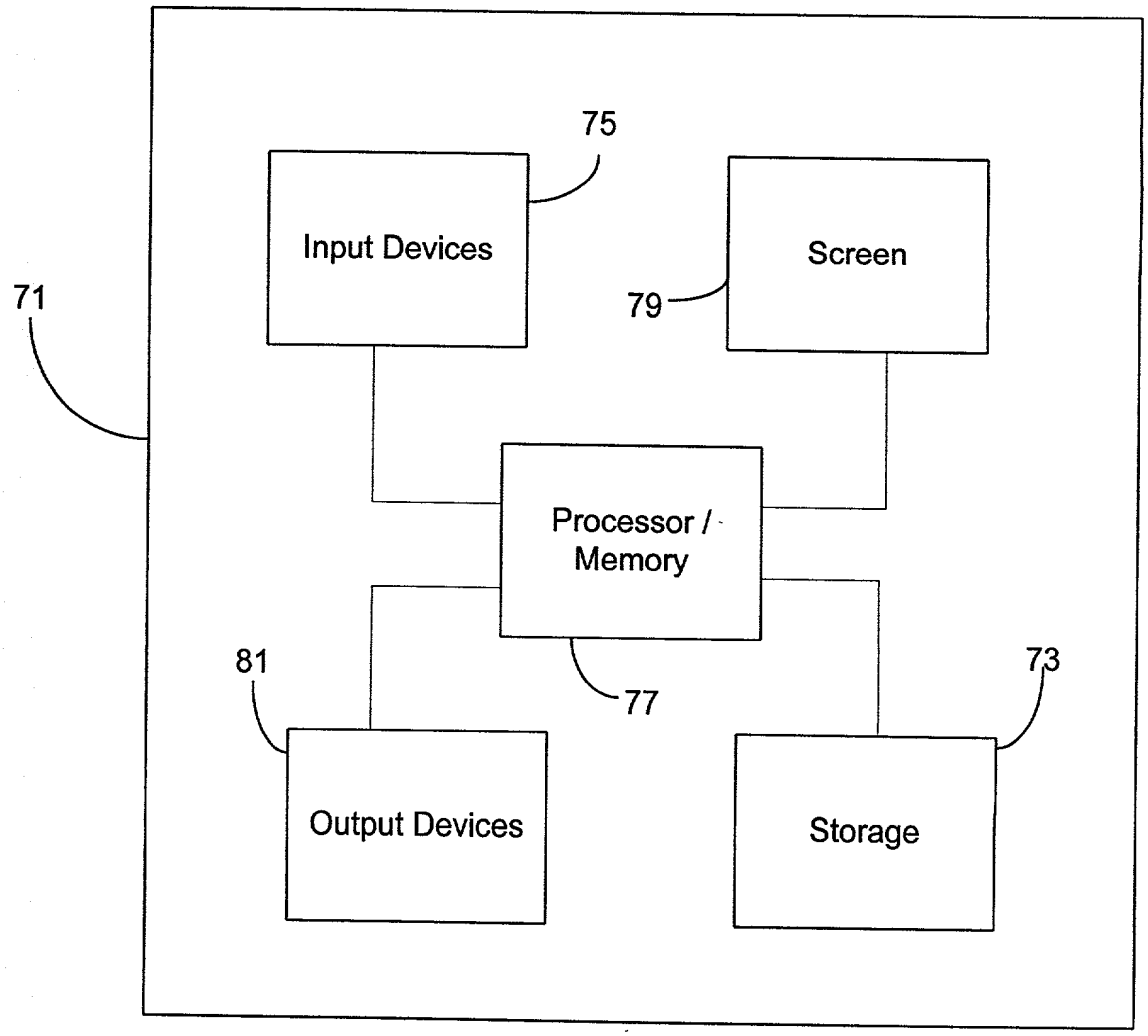
71
75
Input Devices
79
Screen
Processor / Memory
77
81
Output Devices
73
Storage

Fig. 2

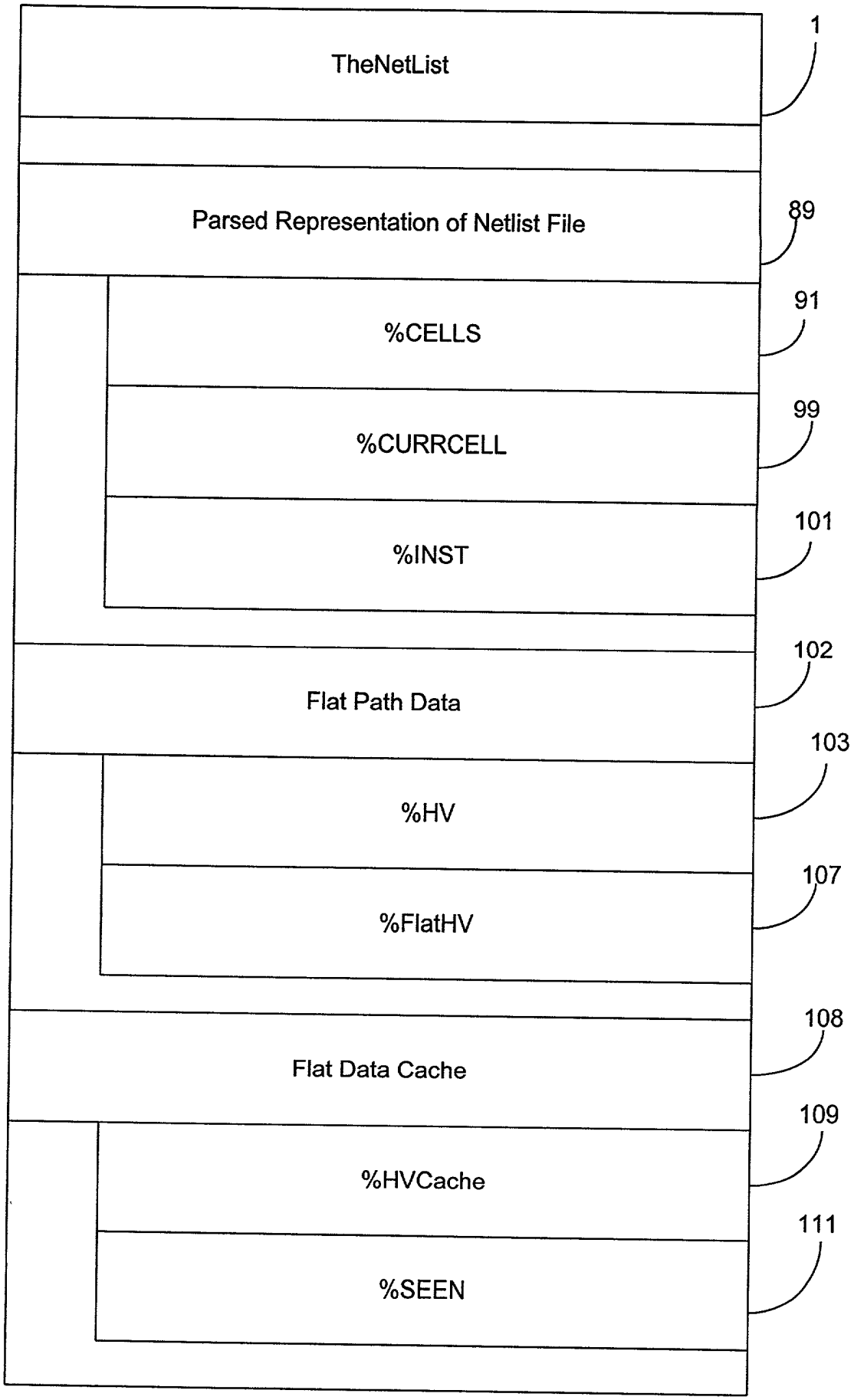
TheNetList
1
Parsed Representation of Netlist File
89
%CELLS
91
%CURRCELL
99
%INST
101
Flat Path Data
102
%HV
103
%FlatHV
107
Flat Data Cache
108
%HVCache
109
%SEEN
111

Fig. 3

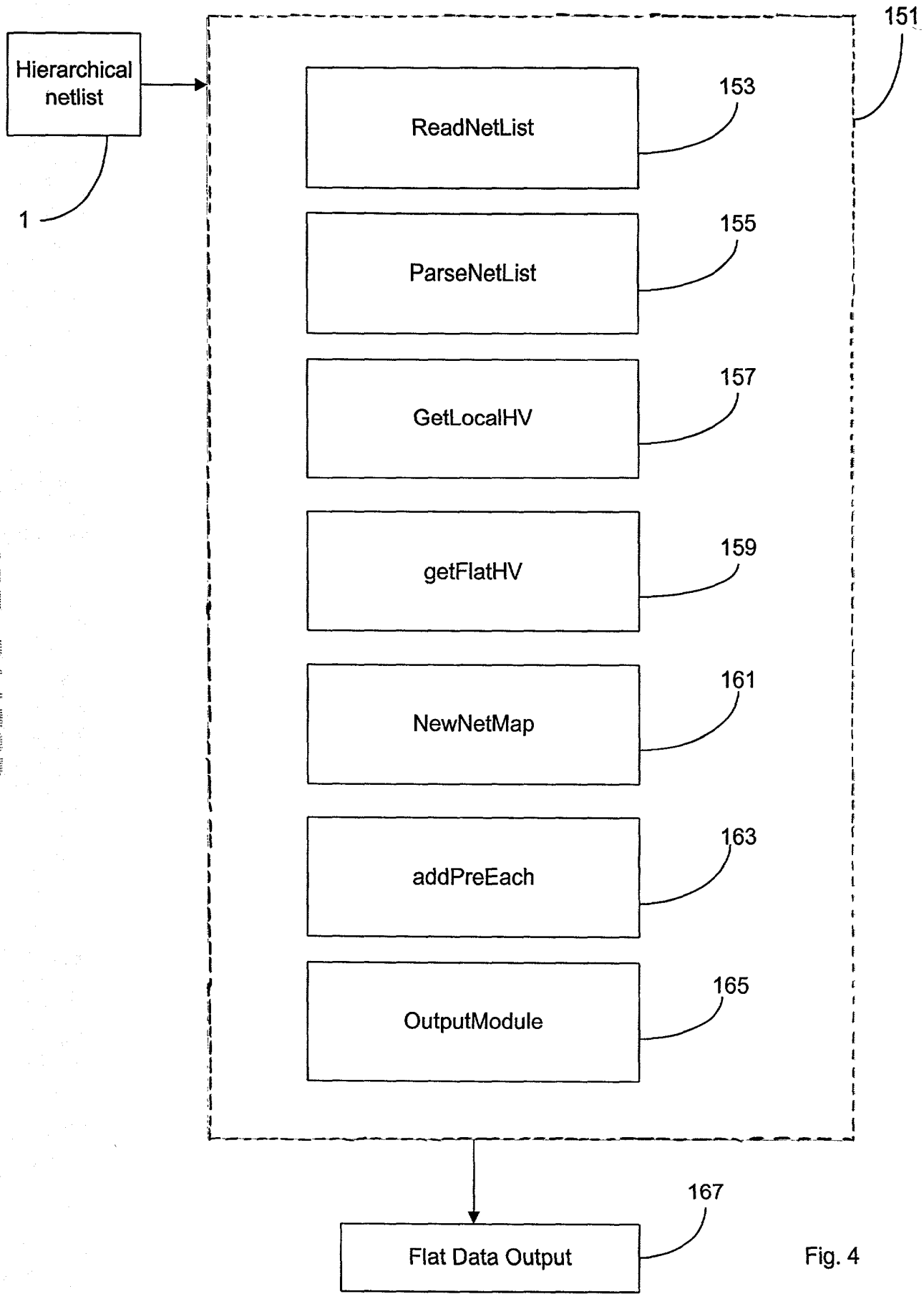
Hierarchical netlist
1
151
ReadNetList
153
ParseNetList
155
GetLocalHV
157
getFlatHV
159
NewNetMap
161
addPreEach
163
OutputModule
165
Flat Data Output
167

Fig. 4

Fast Algorithm To Extract Flat Data From A Hierarchal Netlist

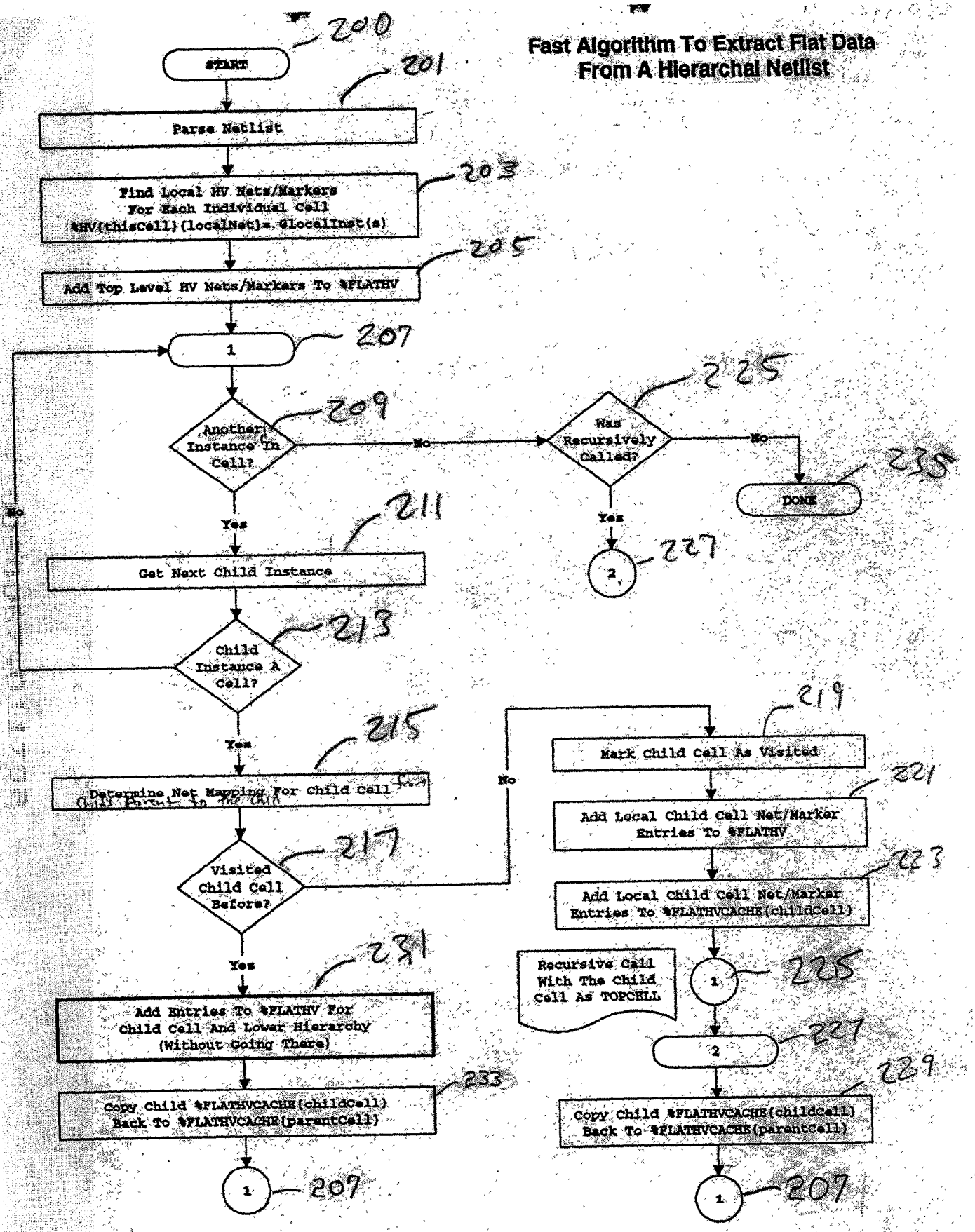

Fig 5

PROGRAM OUTPUT

```
--------------------%HV...
inst=<ercFlatA>
  <INA_1> ------>( <X0> )
inst=<ercFlatB>
  <net2> ------>( <X0> )
inst=<ercFlatTOP>
  <TOP_2> ------>( <X0> )

--------------------%FLATHV...
/I0/net2------>( /I0/I1/X0 )
/TOP_1------>( /I2/X0 )
/I0/I2/net2------>( /I0/I2/X0 )
/I3/net2------>( /I3/X0 )
/TOP_2------>( /X0 /I0/I0/X0 )

--------------------%FLATHVCACHL...
Cell=<ercFlatA>
  Flat
    INA_1------>( X0 )
  Check
  Deep
Cell=<ercFlatB>
  Flat
  Check
  Deep
    net2------>( X0 )
Cell=<ercFlatTOP>
  Flat
  Check
    TOP_1------>( I2/X0 )
    TOP_2------>( I0/I0/X0 )
  Deep
    I0/net2------>( I0/I1/X0 )
    I0/I2/net2------>( I0/I2/X0 )
    I3/net2------>( I3/X0 )
Cell=<ercFlatC>
  Flat
  Check
    net2------>( I1/X0 )
    INC_1------>( I0/X0 )
  Deep
    I2/net2------>( I2/X0 )

---------------------------------------
CPU Time:   0.00 minutes
---------------------------------------
START: Tue Nov 23 10:33:12 MST 1999
  END: Tue Nov 23 10:33:12 MST 1999
---------------------------------------
```

301

303

305

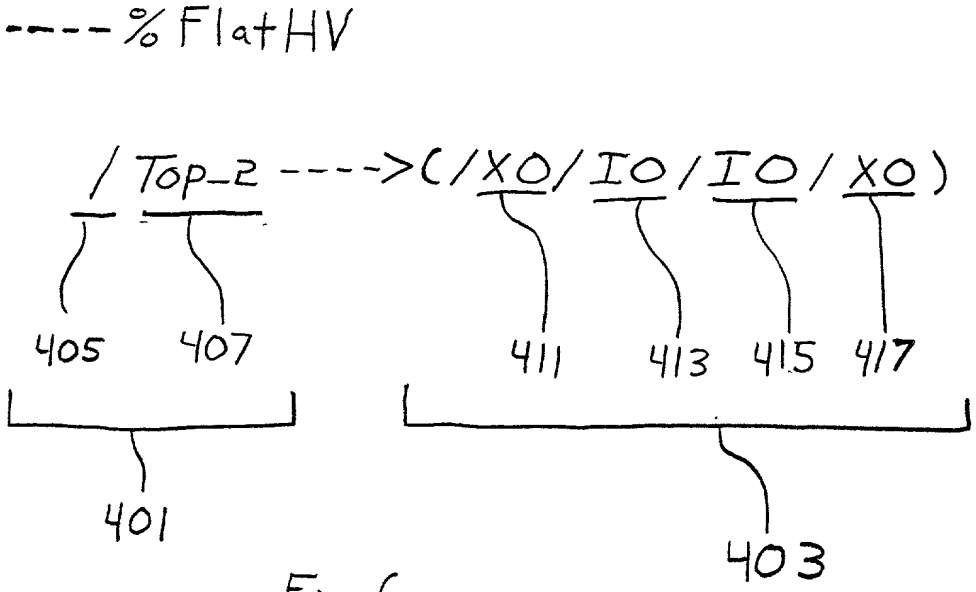

Fig. 6a